ABSTRACT

The present invention discloses a method for synchronizing the sampling rate of digital cells in an integrated services hub. A reference sampling rate is extracted from a network connection. The reference sampling rate represents the rate of sampling occurring at the end of the network connection opposite from the end connected to the integrated services hub. The sampling rate in the integrated services hub is adjusted to about equal the reference sampling rate. The reference sampling rate may be an embedded signal, but preferably is extrapolated from the arrival rate of incoming cells to the integrated services hub. Extrapolation is achieved by monitoring the fill level of incoming cells received into an incoming cell buffer. The sampling rate in the integrated service hub is increased in response to an increase in the fill level of the incoming cell buffer above the midpoint and decreased in response to a decrease in the fill level of the incoming cell buffer below the midpoint. The present invention further discloses an apparatus for synchronizing the sampling rate of digital cells in an integrated services hub. A sampling rate adjuster receives a baseline clock signal and a reference sampling rate. The sampling rate adjuster adjusts the baseline clock signal to about equal the reference sampling rate and outputs a sampling rate signal equal to the adjusted baseline clock signal. A central processing unit (CPU) communicates with and controls the sampling rate adjuster. A coder/decoder (CODEC) communicates with and receives the sampling rate signal from the sampling rate adjuster. A feedback loop communicates the sampling rate signal from the sampling rate adjuster to the CPU. In a preferred embodiment, the sampling rate adjuster is a programmable frequency divider, more preferably a baud rate generator.